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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
SASAN, ARADHANA				
ART UNIT		PAPER NUMBER		
1615				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/511,594

Applicant(s)

NGUYEN-KIM ET AL.

Examiner

ARADHANA SASAN

Art Unit

1615

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9 and 13-34 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 and 16-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 13-15 and 28-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Application

1. The remarks and amendments filed on 04/17/09 are acknowledged.
2. Claims 1-6, 9 and 13-34 are pending. Claims 1-6 and 16-27 are withdrawn. Claims 7-8 and 10-12 were cancelled.
3. Claims 9 and 13-15 were amended. New claims 28-34 were added. Claims 9, 13-15 and 28-34 are included in the prosecution.

Response to Arguments

Rejection of claim 7 under 35 USC § 112, second paragraph

4. In light of Applicants' cancellation of claim 7, the rejection under 35 USC § 112, second paragraph is rendered moot.

Rejection of claim 7 under 35 USC § 102(b)

5. In light of Applicants' cancellation of claim 7, the rejection under 35 USC § 102(b) as being anticipated by GB 1,357,391 is rendered moot.

Rejection of claims 8, 11-12 and 15 under 35 USC § 103(a)

6. In light of Applicants' cancellation of claims 8 and 11-12, the rejection under 35 USC § 103(a) as being unpatentable over GB 1,357,391 is rendered moot.
7. Applicants' arguments, see Page 15, filed 04/17/09, with respect to the rejection of claim 15 under 35 USC § 103(a) as being unpatentable over GB 1,357,391 have been fully considered and are persuasive in light of the amendment of claim 15 to depend on newly added claim 32. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made over Wilhelm et al. (US 3,006,900) in view of Boeckh et al. (US 5,773,541).

Rejection of claims 9-10 and 13-14 under 35 USC § 103(a)

8. In light of Applicants' cancellation of claim 10, the rejection under 35 USC § 103(a) as being unpatentable over GB 1,357,391 in view of Lede et al. (US 2001/0026791 A1) is rendered moot.

9. Applicants' arguments, see Page 18, filed 04/17/09, with respect to the rejection of claims 9 and 13-14 under 35 USC § 103(a) as being unpatentable over GB 1,357,391 in view of Lede et al. (US 2001/0026791 A1) have been fully considered and are persuasive in light of the amendments of claims 9 and 13-14. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made over Wilhelm et al. (US 3,006,900) in view of Boeckh et al. (US 5,773,541).

Rejection of claims 7-10 under 35 USC § 103(a)

10. In light of Applicants' cancellation of claims 7-8 and 10, the rejection under 35 USC § 103(a) as being unpatentable over Lede et al. (US 2001/0026791 A1) is rendered moot.

11. Applicants' arguments, see Page 18, filed 04/17/09, with respect to the rejection of claim 9 under 35 USC § 103(a) as being unpatentable over Lede et al. (US 2001/0026791 A1) have been fully considered and are persuasive in light of the amendment of claim 9. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made over Wilhelm et al. (US 3,006,900) in view of Boeckh et al. (US 5,773,541).

Rejection of claims 7, 8, and 12-14 under nonstatutory obviousness-type double patenting

12. In light of Applicants' cancellation of claims 7-8 and 12, the rejection on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 12 of U.S. Patent No. 5,869,032 is rendered moot.

13. Applicants' arguments, see Page 23, filed 04/17/09, with respect to the rejection of claims 13-14 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 12 of U.S. Patent No. 5,869,032 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

14. In light of Applicants' cancellation of instant claims 7-8 and 12, and the cancellation of claims 11 and 15 of copending Application No. 11/576,612, the provisional rejection on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11 and 15 of copending Application No. 11/576,612 is rendered moot.

15. Applicants' arguments, see Page 24, filed 04/17/09, with respect to the provisional rejection of claims 13-14 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11 and 15 of copending Application No. 11/576,612 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

Claim Objections

16. Claims 28, 30, 32 and 34 are objected to because of the following informalities: there is a typo in part (a) of claims 28, 30, 32 and 34, "by **weigh**" should be corrected to recite "by **weight**". Appropriate correction is required.

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18. Claims 9, 28-32 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilhelm et al. (US 3,006,900).

The claimed invention (as recited in independent claim 30) is a copolymer A) obtained by free-radical copolymerization of:

a) 20 to 40% by weight, based on the total weight of components a) to d), of acrylamide and/or methacrylamide,

b) 40 to 70% by weight, based on the total weight of components a) to d), of at least one α , β -ethylenically unsaturated amide-containing compound of the formula I



where R^1 is a group of the formula $\text{CH}_2=\text{CR}^4$ - where $\text{R}^4=\text{H}$ or $\text{C}_1\text{-C}_4\text{-alkyl}$, and R^2 and R^3 , independently of one another, are each H, alkyl, cycloalkyl, heterocycloalkyl,

aryl or hetaryl, with the proviso that one of the radicals R^2 or R^3 is different from H, or R^2 and R^3 together with the nitrogen atom to which they are bonded are a five- to eight-membered heterocycle, or R^2 is a group of the formula $CH_2=CR^4-$ and R^1 and R^3 , independently of one another, are each H, alkyl, cycloalkyl, heterocycloalkyl, aryl or hetaryl, or R^1 and R^3 together with the amide group to which they are bonded are a lactam with 5 to 8 ring atoms,

c) 0 to 25% by weight, based on the total weight of components a) to d), of at least one unsaturated, water-soluble compound, which is different from components a) and b), and copolymerizable therewith,

optionally in the presence of up to 25% by weight, based on the total weight of components a) to d), of at least one water-soluble component d), which is selected from the group consisting of: d1) polyether-containing compounds, d2) polymers which have at least 50% by weight repeat units derived from vinyl alcohol, d3) starch and starch derivatives, and mixtures thereof.

Wilhelm teaches copolymer products of methacrylamide and N-vinylpyrrolidone (Col. 1, lines 12-15). Example 14 discloses a copolymer of 40% methacrylamide, 50% of N-vinylpyrrolidone and 10% of acrylamide (a water soluble compound different from the methacrylamide and N-vinylpyrrolidone) (Col. 6, lines 59-60). Example 15 discloses a copolymer of 25% methacrylamide and 70% of N-vinylpyrrolidone (Col. 6, lines 72-73).

Therefore the limitations of claims 9, 28-32 and 34 are anticipated by the teaching of Wilhelm.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 13-15 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilhelm et al. (US 3,006,900) in view of Boeckh et al. (US 5,773,541).

The teaching of Wilhelm with respect to copolymers of methacrylamide and N-vinylpyrrolidone is stated above.

Wilhelm does not expressly teach an unsaturated, water-soluble compound which is selected from the group consisting of vinylimidazole and its derivatives, polyether acrylates and mixtures thereof.

Boeckh teaches copolymerizable monomers including methacrylamide, N-vinylpyrrolidone and N-vinylimidazole where the monomers are used in amounts of 0-30 mol % in the copolymerization (Col. 2, lines 45-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a copolymer comprising methacrylamide, N-vinylpyrrolidone and a water soluble compound, as suggested by Wilhelm, substitute the water soluble compound with N-vinylimidazole that is copolymerizable with methacrylamide and N-vinylpyrrolidone, as taught by Boeckh, and produce the instant invention.

One of ordinary skill in the art would do this because Boeckh teaches that N-vinylimidazole is copolymerizable with methacrylamide and N-vinylpyrrolidone. Combining prior art elements according to known methods to yield predictable results would have been obvious. Please see MPEP 2141.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Regarding instant claims 13-15 and 33, the limitations of parts (a) and (b) would have been obvious over Examples 14 and 15 as disclosed by Wilhelm (with a copolymer of 40% methacrylamide and 50% of N-vinylpyrrolidone and a copolymer of 25% methacrylamide and 70% of N-vinylpyrrolidone respectively (Col. 6, lines 59-60 and lines 72-73). The limitation of part (c) would have been obvious over the copolymerizable N-vinylimidazole, methacrylamide and N-vinylpyrrolidone taught by Boeckh (Col. 2, lines 45-65). The limitation of 0.2 to 20% by weight of component (c) would have been obvious over the 0-30 mol % N-vinylimidazole in the copolymerization taught by Boeckh (Col. 2, lines 45-65). For instance, if 10 mol % of N-vinylimidazole (taught by Boeckh) is used in place of the 10 wt % of acrylamide (taught by Wilhelm, Example 14), the calculated weight percent of the N-vinylimidazole is 16.9% if starting with 100 moles, methacrylamide $40\% \times 85.1\text{g/mol} = 3404\text{g}$, N-vinylimidazole $10\% \times 94.12\text{g/mol} = 941.2\text{g}$, N-vinylpyrrolidone $50\% \times 111.14\text{g/mol} = 5557\text{g}$. The total weight

is 9902.2g. The calculated wt % of the N-vinylimidazole is $941.2\text{g}/9902.2\text{g} = 16.9\%$.

One of ordinary skill in the art would find it obvious to use a lower mole % of the N-vinylimidazole since Boeckh teaches the range of 0-30 mol % and the recited ranges of component (c) in claims 13-15 would have been obvious variants unless there is evidence of criticality or unexpected results.

Regarding instant claim 13, the limitation of 0.1 to 10% by weight of polymer d2) which are derived from vinyl alcohol would have been obvious over the copolymers which have vinyl alcohol units as additives as taught by Boeckh (Abstract). The weight % would have been obvious variants over the vinyl alcohol derivatives (such as vinyl acetate) that are used in amounts of 20 – 80 mol % in the copolymerization (Col. 2, lines 16-28).

Conclusion

21. No claims are allowed.
22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aradhana Sasan whose telephone number is (571) 272-9022. The examiner can normally be reached Monday to Thursday from 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached at 571-272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Aradhana Sasan/
Examiner, Art Unit 1615

/MP WOODWARD/
Supervisory Patent Examiner, Art Unit 1615